

Public Notice

Prince William Forest Park NOTICE OF AVAILABILITY

Environmental Assessment (EA) for the Installation of a New Waterline

The National Environmental Policy Act (NEPA) requires public review of proposed federal actions that may significantly affect the environment. Accordingly, Prince William Forest Park has prepared a Finding of No Significant Impact (FNSI) supported by an environmental assessment for the construction of a new underground water line within the Park. Copies of this document are available for view at Prince William Forest Park and on the web at www.nps.gov/prwi.

You are invited to submit written comments on Prince William Forest Park's decision not to prepare an environmental impact statement within 30 days of the date of this notice. Please submit any comments to Superintendent, Prince William Forest Park, 18100 Park Headquarters Rd., Triangle, VA 22172 or e-mail comments to *PRWI_Superintendent@nps.gov*.

For further information, contact Brian Carlstrom, Resource Program Manager, Prince William Forest Park, 18100 Park Headquarters Rd., Triangle, VA 22172, 703-221-3329 during normal business hours, Mon. - Fri. 7:30 a.m. to 4 p.m.

DRAFT ENVIRONMENTAL ASSESSMENT

PRINCE WILLIAM FOREST PARK WATERLINE



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For

U.S. Department of the Interior
National Park Service
Prince William Forest Park
Triangle, VA

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Chapter 1 – Purpose and Need

Purpose and Need

The purpose of the proposed Federal action is to construct a new water main to serve visitor facilities throughout the park. Currently, only Camps 1, 4, and the Travel Trailer Village are served by public water and sewer. All other park facilities rely on wells and springs for domestic water. These old water systems are difficult and expensive to maintain and have limited capacity for use by park visitors and staff. The current water system was installed back in the late 1930's/early 1940's when this area became a park. It has been updated several times over the years. Over time these systems can fail progressively, and in so doing can present a public health hazard from the release of fecal coliform bacteria from septic systems, and pollution of wells and springs from a variety of ground and surface water sources.

The Prince William Forest Park General Management Plan (GMP) has identified the replacement of the existing wells and springs with connection to public water supply as a priority. The GMP states

“The need to connect to public water and sewer lines as soon as possible has been identified. This would include upgrading aging waterlines, preventing potential public health problems, avoiding water supply interruptions, and meeting increasingly stringent regulations for public water supplies..... as of 1998, park staff have identified the most urgent needs as connecting to the municipal water system...”

In addition to enhancing public health in the park, the proposed project would add a fire hydrant nearby each cabin camp and park operations building. This infrastructure would add greatly to safety for park staff and visitors and add a major measure of protection to the cultural resources of the park. Current fire-fighting capabilities at the historic structures in the park are limited by water availability and line pressure.

Project Location

Prince William Forest Park is located in the southeast corner of Prince William County, Virginia, 32 miles south of Washington, D.C. Interstate 95, a major north-south travel route, is located east of the park boundary and provides access to the park from two major exits. State Highway 234 borders Prince William Forest Park on the north and State Highway 619 forms the border on the south and west. The Chopawamsic backcountry area is a detached portion of the main park with access from State Highway 619.

Lands adjacent to the park boundary are equally divided between public and private ownership. The Quantico Marine Corps Base and Quantico National Cemetery are located on the southern boundary, along with small private inholdings located along State Highway 619. The lands along the northern boundary are predominantly private ownership and are zoned either residential or commercial.

Introduction and Background

Prince William Forest Park was originally known as the Chopawamsic Recreation Demonstration Area in 1933, and transferred to the Department of the Interior as a unit of the National Park Service in 1936. Continuing population growth and land development in Northern Virginia have destroyed much of the Piedmont Forest, making the park a rare example of the Piedmont forest. Prince William Forest Park is the only component of the National Park System dedicated to preserving a representative example of the Piedmont/Triassic physiographic province and the unique deciduous forest type that it supports. It protects major portions of Quantico Creek and Chopawamsic Creek watersheds and a piedmont/coastal plain transition zone that appears much as it did in early colonial times.

The park preserves and administers five cabin camps that were originally constructed by the Civilian Conservation Corps. Camps 1, 2, 3, and 4 are listed on the National Register of Historic Places. Portions of the park were used during World War II as a training area for the Office of Strategic Services, the forerunner of the modern Central Intelligence Agency. The cabin camps are currently used for group camping and for training by a variety of government agencies.

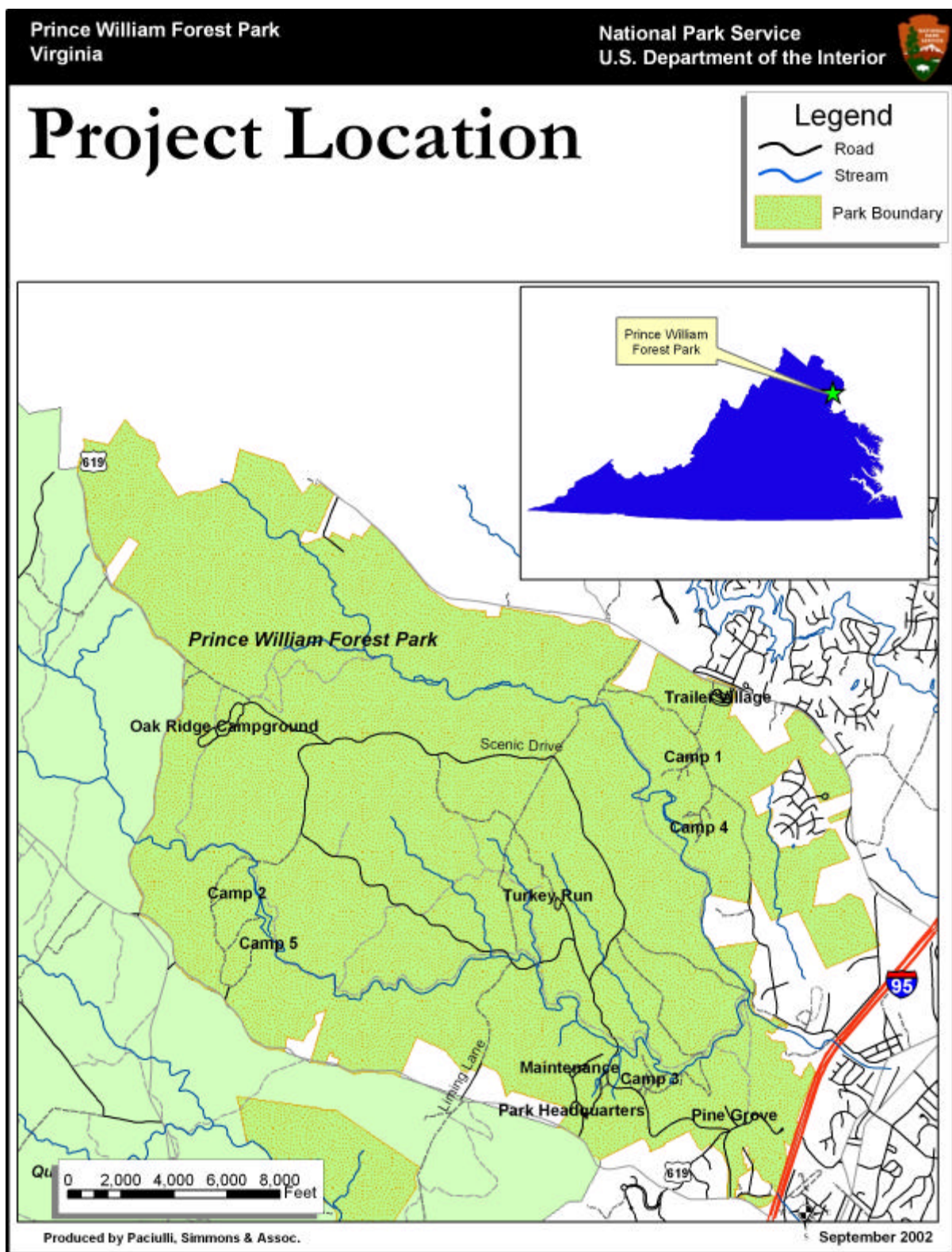


Figure 1.

Compliance with Environmental Statutes

National Environmental Policy Act of 1969

All Federal agencies are required to consult with each other and to use systematic and interdisciplinary techniques in planning and decision-making. The National Environmental Policy Act (NEPA) requires a full and honest disclosure of all environmental impacts associated with the proposed alternatives.

This Draft Environmental Assessment has been prepared in compliance with NEPA. The draft is being distributed for a 30-day public review. All comments and letters received will be reviewed and considered in the final version of this document.

Endangered Species Act of 1973

The Endangered Species Act (ESA) requires consultation with the U.S. Fish and Wildlife Service (USFWS) for Federally listed threatened and endangered species known to exist or potentially exist in the project area. Section 7 consultation with the USFWS was initiated in 2002. USFWS consultation identified the following relevant species.

Species	Federal Status	Global Rank / State Rank
Small Whorled Pogonia (<i>Isotria medeoloides</i>)	Threatened	G2; S2
Lemmer's pinion moth (<i>Lithophane lemmeri</i>)	N/A	G3/G4; S1/S2
Sedge sprite (<i>Nehalennia irene</i>)	N/A	G5; S1
Dwarf wedge mussel (<i>Alasmidonta heterodon</i>)	Endangered	G1G2 ; S1

Based on the review of this document, the USFWS will decide whether concurrence with a Finding of No Significant Impact is appropriate.

Fish and Wildlife Coordination Act of 1958

The Fish and Wildlife Coordination Act requires that whenever the Federal Government authorizes, sponsors or issues a permit to impound, modify, divert, or otherwise control the waters of any stream or body of water for any purpose by any entity, the entity must consult with the USFWS and the State fish and wildlife management agencies.

The USFWS has been provided opportunity to comment on the project through consultation under the ESA, and by review of this draft EA. The Virginia Department of Game and Inland Fisheries has also been consulted in development of the project and provided the opportunity to comment on this draft EA.

Clean Water Act of 1972 – Section 404

Section 404 of the Clean Water Act of 1972, as amended, is administered by the U.S. Army Corps of Engineers (COE) with oversight from the Environmental Protection Agency. All activities involving the dredging or filling of waters of the United States, including wetlands, are subject to the COE permitting process. Nationwide and individual permits are issued under Section 404 of the Clean Water Act. Nationwide permits are issued on a state basis for any category of activities where such activities are similar in nature and will cause only minimal adverse environmental effects individually and cumulatively. Individual permits are issued for projects with more extensive impacts on wetlands. The National Park Service expects to obtain a nationwide permit for the work of this project.

Clean Water Act of 1972 – Section 401

Section 401 of the Clean Water Act provides the States and Indian Tribes with authority to grant or deny certification for a federally permitted or licensed activity that may result in discharge to the waters of the United States. Compliance with Section 401 would be achieved by review of this document by the Virginia Department of Environmental Quality.

Clean Water Act of 1972 – Section 402

Section 402 of the Clean Water Act gives the states primacy in regulating the point source discharge of wastewater into the waters of the United States.

Clean Air Act of 1972

The Clean Air Act requires that any Federal entity engaged in an activity that may result in the discharge of air pollutants must comply with all applicable air pollution control laws and regulations, Federal, State, or local. The Act requires the EPA to publish national primary standards to protect public health and more stringent national secondary standards to protect public welfare. States and local governments are responsible for the prevention and control of air pollution. Measures will be incorporated into the contractor's construction specifications to ensure that compliance with these laws is assured.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act of 1978 (AIRFA) requires Federal agencies to consider the impacts of projects on the ability of American Indians to continue their traditional cultural and religious practices.

Archaeological Resources Protection Act of 1979

This statute requires permits for the removal of archaeological resources from Federal or Indian lands. Permits may be issued to educational or scientific institutions only if the removal would increase knowledge about archaeological resources.

Archaeological and Historic Preservation Act of 1974

The Archaeological and Historic Preservation Act of 1974 authorizes Federal agencies to protect historical and archaeological data that might be lost as a result of construction of irrigation projects, dams or other Federal activity.

National Historic Preservation Act of 1966, as Amended in 1992

The National Historic Preservation Act (NHPA) requires Federal agencies to carry out all activities regarding the protection of historic properties in cooperation with States, Tribes, and local governments. The Act designates the State Historic Preservation Officer (SHPO) as the responsible entity in each State and Tribal Historic Preservation Officer (THPO) for Tribes for administering programs under NHPA. The act also creates the Advisory Council of Historic Preservation (ACHHP) to serve as the advisory body to the Executive Branch on historic preservation issues. Section 106 of the Act requires Federal agencies to consider the effects of their undertakings on historic resources and to give the SHPO or THPO and the ACHHP reasonable opportunity to comment on the effects of those undertakings. The 1992 amendments require the Federal agency to consider the impacts of undertakings on properties of traditional religious and cultural importance to American Indians and to involve American Indian tribes to participate in the consultation process, should such resources be affected.

The National Park Service has initiated consultation with the Virginia SHPO on this project.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA) establishes Federal policy with respect to Native American burials and graves located on Federal or Indian lands. Federal agencies are required to consult with and obtain the concurrence of the appropriate Tribes with respect to activities that may result in the disturbance and/or removal of such burials and graves on Federal or reservation lands.

No burials and graves have been identified in the project area. Since the project area has been previously disturbed, it is doubtful that any would be encountered, but if burials or graves are discovered, NPS will comply with the provisions of NAGPRA.

Executive Order 11988, Flood Plain Management

Executive Order 11988 directs Federal agencies to take flood plain management into account when formulating or evaluating water or land use plans. No alteration of flood plains will be caused by this project.

Executive Order 11990, Protection of Wetlands

Executive Order 11990 directs each Federal agency to provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out agency duties and responsibilities. Best Management Practices (BMPs) will be implemented during construction to reduce erosion and turbidity in the streams.

Subtitle III of Title 28.2 of the Code of Virginia

This portion of the Code of Virginia gives authority to the Virginia Marine Resources Commission for alterations to sub aqueous habitat. The US Army Corps of Engineers, the Virginia Department of Environmental Quality, and the Virginia Marine Resources Commission jointly review permits for these activities. The National Park Service will secure this permit.

Chapter II – Alternatives

1) ***No Action Alternative***

Under the No Action Alternative, the installation of waterlines to serve the park facilities would not occur.

2) ***Road-Shoulder Option***

This option would use the shoulder of paved park roads as a route for the new waterline. On dirt or gravel roads, the waterline would be routed within the roadway itself. This option would create impacts to trees on the edge of approximately 6.5 miles of paved rights-of-way. This option would, however, entail significant increases in cost of construction, as well as possible future maintenance problems where the waterline would cross the paved roads. Experience has shown that paved roadways that are cut and then re-surfaced often subside over time, creating an uneven road surface. This option would also entail a greater degree of interruption to public use of the park during construction than the preferred alternative, which entails fewer impacts to existing roads, as the sections of paved roadway under active excavation would have to be closed to all traffic temporarily.

3) ***Existing Right-of-Way Option - Preferred Alternative***

This option would utilize existing utility rights-of-way and existing dirt or gravel roads for most of the route. The park is crossed by telephone and power lines that have created clearings in the woods. In most cases these utilities do not follow roadways or trails. Under this alternative these existing disturbed areas would form 30.2% (3.75 miles) of the total project length. Construction under existing dirt or gravel roads would comprise 55.6% (6.91 miles), and construction along the shoulder of Scenic Drive would comprise 14.2% (1.76 miles) of the project length. Cross-sections of the waterline alignment are shown in Figures 2 and 3.

This option would minimize environmental impacts by restricting construction activity primarily to previously disturbed areas. Construction in the existing unpaved roads would have little or no impact, as the land disturbing activities would be limited to the road surface. Construction in the existing utility rights-of-way would involve disturbance only to herbaceous vegetation, as these areas are regularly cleared of woody vegetation to maintain access to the utilities.

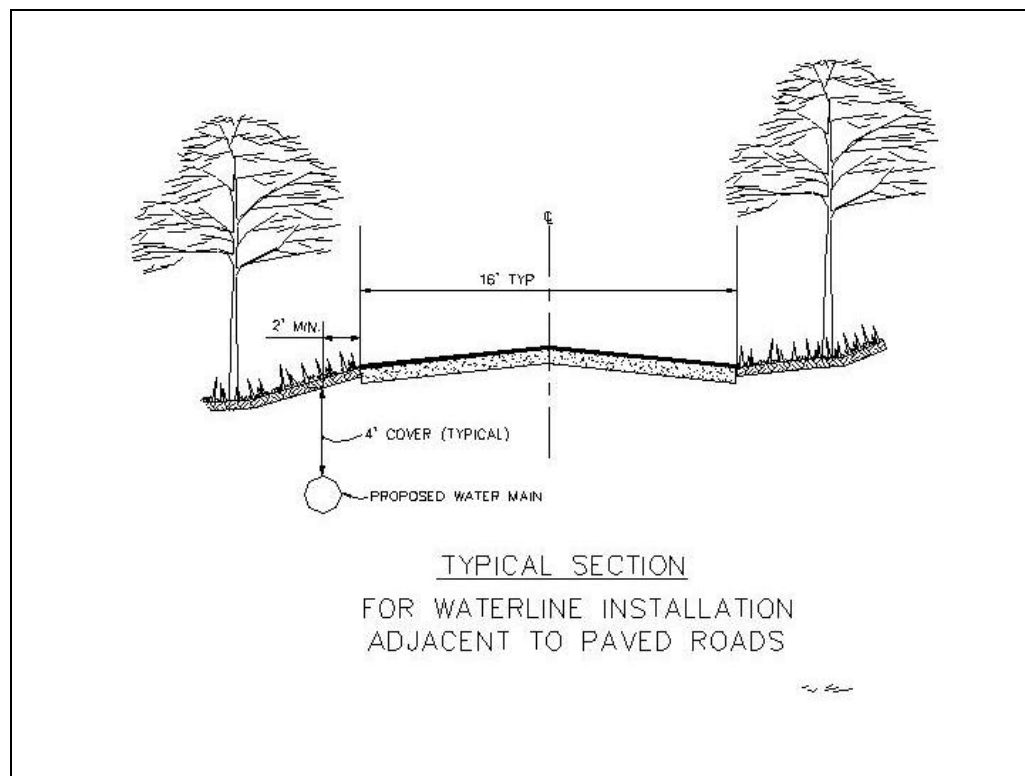
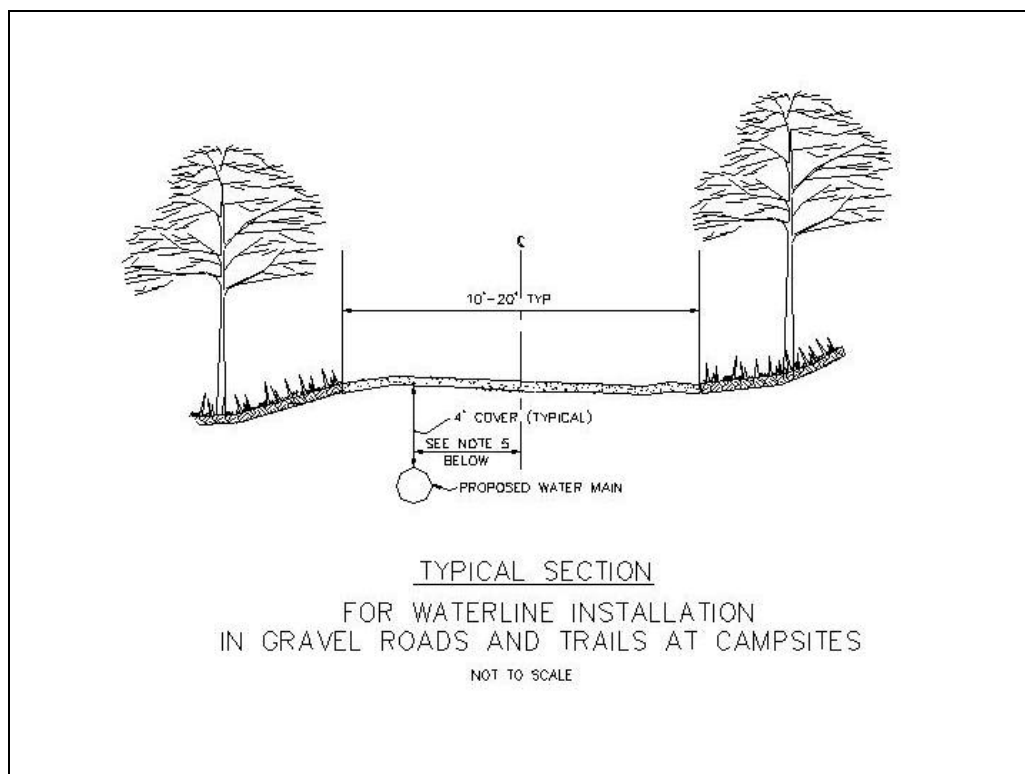
All options would require stream crossings at several locations throughout the park. Impacts to the streams would be temporary and restricted to the period of active work on the sections of the waterline surrounding the streambed. Environmental impacts would be minimized by using cofferdams to divert stream flow around approximately one-half of the streambed at a time and completing construction in the de-watered section. The first cofferdam would then be removed and flow routed into the completed section of streambed and construction accomplished in the other half. The streambed and surrounding banks would be returned to their pre-construction condition by grading and re-planting the affected areas. Streambed

impacts would be limited to an area of approximately 40 linear feet along each stream crossing, centered on the location of the waterline as shown in the accompanying maps.

The stream crossings would involve impacts to the Prince William County Chesapeake Bay Resource Protection Areas surrounding the perennial streams and associated wetlands. Utility projects are exempt from the requirements of the Chesapeake Bay Ordinance.

In accordance with the requirements of the Virginia Pollution Discharge Elimination System, a number of measures will be put in place to ensure the project does not contribute stormwater runoff to the park's streams. These measures include:

- ?? No solid materials shall be discharged to surface water. Solid materials, including building materials, garbage, and debris shall be cleaned up daily.
- ?? A record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated shall be maintained.
- ?? Any on-site vehicle refueling is conducted by truck or on-site tank in a dedicated location away from access to surface waters. Containment berms are located adjacent to the refueling area that will contain any inadvertent spills until they can be cleaned up. Any on-site storage tanks will have a means of secondary containment. In the event of a spill, it will be cleaned up immediately and the material, including any contaminated soil, will be disposed of according to all Federal, state, and local regulations.
- ?? Any chemicals used on-site are kept in small quantities and stored in closed containers undercover and kept out of direct contact with storm water. Chemicals stored on-site include paints, cleaning supplies, and miscellaneous items for construction that are normally in garages on concrete slabs. As with fuels and oils, any inadvertent spills will be cleaned up immediately and disposed of according to Federal, state, and local regulations.

**Figure 2.****Figure 3**

Alternatives Considered but Eliminated from Further Consideration

During initial studies for this project, an alternative was considered that would have routed the waterline through undisturbed forested areas for portions of the route. This alternative would have entailed extensive loss of mature trees and would have been not in compliance with current General Management Plan goals for re-forestation and habitat protection. This alternative was deemed environmentally unacceptable.

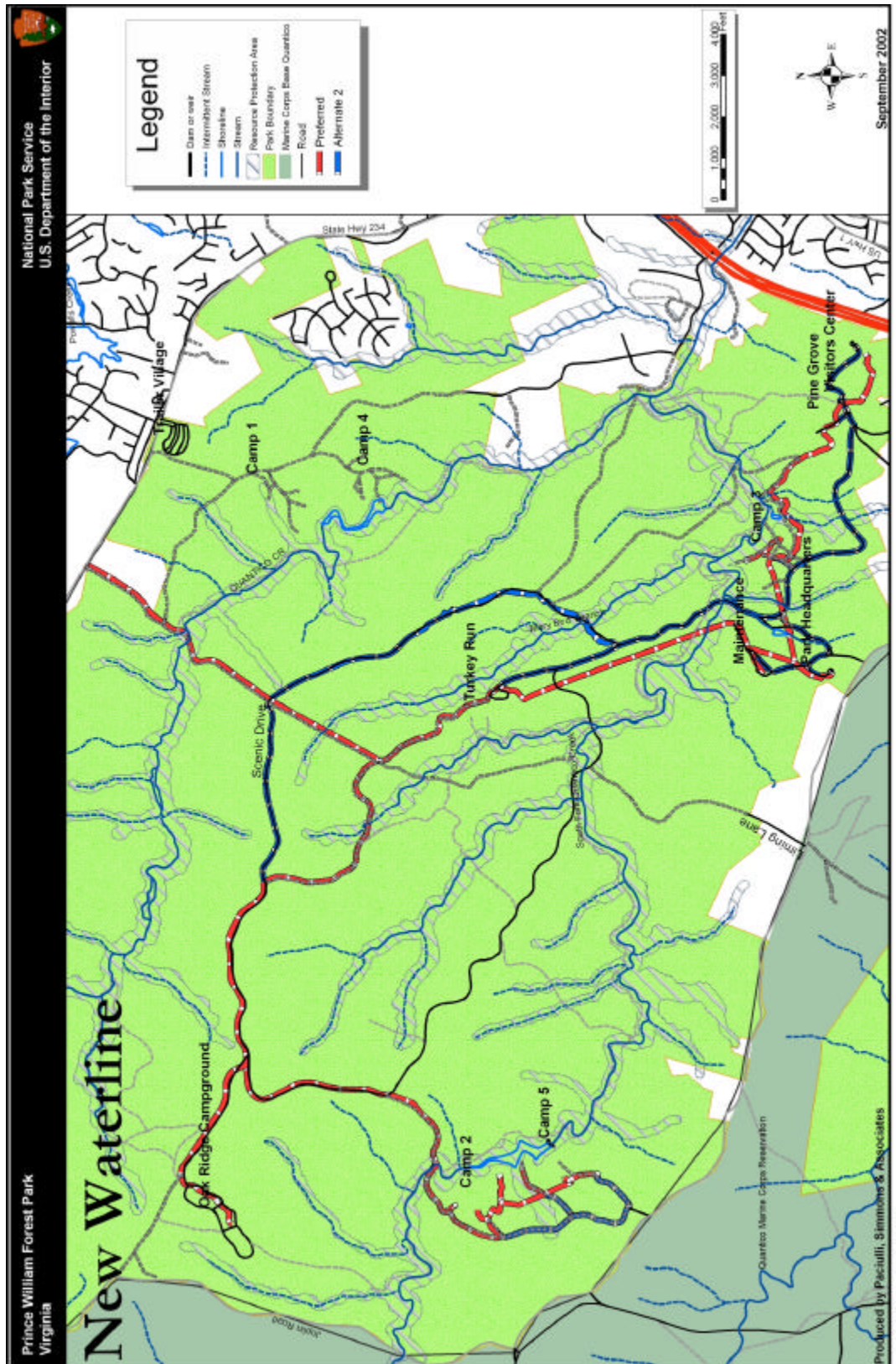


Figure 4.

Chapter III – Affected Environment and Environmental Consequences

Resources Not Affected by Proposed Action

Due to the linear nature of the project, and its location within portions of the park already subject to human activity such as roads and utility rights-of-way, no significant impacts are expected to the soils, topography, or land use. Each of these resources is briefly described below. No negative impacts to environmental justice issues or to Indian Trust Assets are expected.

Soils

Approximately three-fourths of the park is in the Piedmont and one-fourth in the Coastal Plain Physiographic Region. The topography is rolling, with narrow ridges and relatively steep-sided valleys. The park is underlain by late Precambrian to early Paleozoic rocks, which are overlain in the eastern part of the park by unconsolidated Cretaceous period deposits. The soils of the park are sandy, relatively infertile, and easily disturbed. The steep terrain and poor quality soils combine to create severe erosion problems. In the Piedmont, the geology consists largely of granite gneiss, hornblende gneiss, and mica schist rock types. The ridges of the Piedmont are capped with thin mantels of coastal plain or other alluvial sediments in many places. The soils have low permeability, making them subject to seasonal wetness.

The project area is confined to the Piedmont portion of the park. Soil erosion that may be caused by construction would be controlled with appropriate erosion and sediment control devices such as silt fences, check dams, and berms. Long-term soil erosion will be minimized by re-establishing vegetation on areas disturbed by construction activities.

Topography

Relief is moderate, and elevations range from about 10 feet above mean sea level (MSL) to nearly 400 feet MSL. Ridge tops are narrow to moderately wide and nearly level on top. Side slopes are variable in width and may be very steep. Fairly broad flood plains have developed along the larger streams. The project would not result in changes to topography.

Land Use

Although the project traverses many areas of the park, the impacts of construction would be limited to areas already used for transportation and utility access. The project would serve areas used for camping, education and interpretation, sightseeing, and active recreation. The project would not alter land use within the park.

Environmental Justice

Executive Order 11898 requires that direct or indirect effects of the Preferred Alternative, including equitable distribution of benefits and risks on minority or low-income populations and communities be identified and evaluated. The Existing Right-of-Way, Preferred Alternative would not exclude, either by intention or design, any minority or low-income populations within the project area from benefits associated with the action. Additionally, a decision to implement the Existing Right-of-Way, Preferred Alternative would not subject

any minority or low-income populations to a disproportionate share of project-related environmental or health risks or to an inequitable share of project costs. No environmental justice issues would be raised by this project.

Indian Trust Assets (ITA)

ITAs are defined as legal interests in property held in trust by the United States for Indian Tribes or individuals. Examples of ITAs include lands, minerals, timber, hunting and fishing rights, water rights, and instream flows.

ITAs are those properties, interests, or assets of an Indian Tribe or individual Indian over which the Federal Government also has an interest, either through administration or direct control. The Federal Government acts in a fiduciary or trust capacity with respect to these properties, interests, or assets. No ITAs would be affected by the project.

Resources Potentially Affected by Proposed Action

Visual

Affected Environment

Prince William Forest Park is a natural preserve in the midst of intensive urban development. The park serves as a scenic refuge within the urban corridor. Visitors commonly come to the park to experience the tranquility of the deep forest habitat, and view the rich wildlife.

Environmental Consequences

No Action Alternative – The no action alternative would create no impacts to the visual environment

Road-Shoulder Option – The waterline would be invisible to visitors after installation. This option would alter the visual aspects of the Scenic Drive by removing a number of mature trees on the road shoulder throughout the waterline route. During construction visitors would see crews in a variety of locations working and heavy equipment being used for excavation.

Existing Right-of-Way, Preferred Alternative – This alternative would cause reduced visual impacts compared to the Road-Shoulder Option. Tree-cutting would be significantly reduced, and confined to approximately 1 mile on the Scenic Drive. Temporary visual impacts during construction would be similarly reduced compared to the Road-Shoulder Option.

Air Quality

Affected Environment

Air quality in the park is negatively affected by surrounding commercial and industrial development, as well as by the adjacent Marine Corps Base Quantico. The Interstate 95 corridor that abuts the eastern boundary also contributes to air quality degradation. There is currently no established air quality monitoring program in the park. The park lies within an EPA-designated non-attainment area for ozone.

Environmental Consequences

No Action Alternative – This alternative would cause no air quality impacts in the park.

Road-Shoulder Option – Construction activities would cause short-term dust generation and equipment emissions. Exceedance of National Ambient Air Quality Standards is not expected. Any impacts associated with dust generation would be mitigated with the use of water spraying.

Preferred Alternative- Air quality impacts from this alternative would be identical to those for the Road-Shoulder Option.

Noise, Traffic and Safety

Affected Environment

The natural quiet of the park is a valuable resource due to its proximity to the Nation's Capital, Interstate 95, a major north-south travel route, local highways 234 and 619, and local residential development. Frequent training exercises occurring on the adjacent Marine Corps Base Quantico have a negative impact on the noise environment of the park due to jet and helicopter aircraft overflights and from explosions and gunfire.

Environmental Consequences

No Action Alternative – This alternative would create no immediate impacts to noise, traffic, and safety. However, the possible future failure of the existing water supply and septic systems could create a serious health hazard for park visitors and staff.

Road-Shoulder Option – Waterline construction would cause a temporary increase in noise and traffic associated with construction activities. Equipment used for construction would be expected to generate noise levels of 60 to 100 A-weighted decibels at active work sites for up to 540 days. Trucks hauling construction equipment and materials would contribute to traffic, and safety concerns in the park. The construction contractor would be required to provide traffic control devices such as barricades, flasher lights, and danger signals during the construction period. The impact from constructions would be short term and minor.

Existing Right-of-Way, Preferred Alternative – Impacts from this alternative would be similar to those for the Road-Shoulder Option, but would be of somewhat shorter duration due to the simpler construction process for this alternative. Noise impacts would be restricted to more remote areas for most of the construction period.

Water Resources

Affected Environment

Quantico Creek, South Fork Quantico Creek and Mary Bird Branch are the primary aquatic resources in the park. These streams flow from northwest to southeast. Mary Bird Branch joins the South Fork near Camp 3 and the South Fork and Quantico Creek flow together near the park's eastern boundary. The streams of Prince William Forest Park are of relatively high quality and are used as reference streams for a number of stream bioassessment programs in Northern Virginia. Altogether these streams drain more than 16,500 acres before crossing the eastern boundary together as the main stem of Quantico Creek.

Environmental Consequences

No Action Alternative – The no action alternative would create no immediate impacts on the water resources of the park. However, should the existing water and septic systems fail as

anticipated, the park's water resources could be significantly degraded by reduction in groundwater levels.

Road-Shoulder Option – There would be eight locations where the new waterline would cross intermittent or perennial streams in the park. In these areas the waterline would be routed in such a manner as to avoid natural resources to the extent possible. For instance, the route would be designed to minimize impacts to waters of the United States, including wetlands. The excavated area in the stream crossing would be re-graded to conform to pre-construction elevations and a natural stream substrate restored.

A Storm Water Pollution Prevention Plan (SWPPP) as required by Section 402 of the Clean Water Act would be prepared prior to construction. The SWPPP would identify pollutant sources that may affect the quality of stormwater discharges, and identify practices to reduce pollutants in stormwater discharge during and after construction. The SWPPP would form a portion of an application for a Virginia Pollution Discharge Elimination System (VPDES) permit. The VPDES permit application would be prepared and submitted by the National Park Service to the Virginia Department of Environmental Quality for issuance of the VPDES permit. Prince William Forest Park currently conducts on-going monitoring of water quality and aquatic biological community health. This program will be expanded to include regular monitoring of the streams in the vicinity of the project to assure minimization of impacts to the aquatic biota.

Section 404 of the Clean Water Act identifies requirements for a regulatory permit for activities affecting the waters of the United States, including wetlands. A wetland delineation has been conducted on the project area, and the National Park Service would secure the appropriate authorization from the U.S. Army Corps of Engineers.

This alternative crosses the Prince William County Chesapeake Bay Resource Protection Area (RPA) at eight locations. Impacts to the RPA would be temporary, and the RPA would be restored to its prior conditions following the completion of construction of each stream crossing. Utility stream crossings are exempt from local regulation under the Chesapeake Bay Act.

Existing Right-of-Way, Preferred Alternative – The impacts of the preferred alternative would be similar to those of the Road-Shoulder Option.

Fisheries Resources

Affected Environment

Local fishermen use the streams of Prince William Forest Park for cold and warm water fisheries. The species present in the streams of the park include American eel, common shiner, golden shiner, white sucker, creek chub sucker, northern hogsucker, brown bullhead, chain pickerel, sunfish, yellow perch, smallmouth bass, rainbow trout, brown trout, and channel cat. All fish populations are naturally reproducing or remnants from previous stocking. There are currently no fish stocking programs conducted by the Virginia Department of Game and Inland Fisheries or the National Park Service.

Environmental Consequences

No Action Alternative – This alternative would have no immediate impact on fisheries resources, although the possible future failure of the park's existing water supply systems could have a negative impact on surface water quality and consequently on the fisheries resources.

Road-Shoulder Option – This alternative would generate temporary increases in turbidity in the streams when construction reaches the stream crossings. These impacts would be minimized by proper siltation control. The impacts to fisheries resources would be short in duration for each of the stream crossings.

Existing Right-of-Way, Preferred Alternative - The impacts of the preferred alternative would be similar to those of the Road-Shoulder Option.

Vegetation

Affected Environment

The area of the park was one of the first parts of the North American continent to be settled by Europeans in the 1600s. From this period until the early 20th century, much of the park was intensively farmed and eventually abandoned due to exhaustion of the soil. The most mature forest in the park is found in the deep valleys of Quantico Creek and its tributaries. Younger forests occupy most of the park. Wetlands and grasslands cover small areas.

The most common forest species currently found at Prince William Forest Park are white oak (*Quercus alba*), red oak (*Quercus rubra*), hickory (*Carya spp.*), tulip poplar (*Liriodendron tulipifera*), American beech (*Fagus grandifolia*), maple (*Acer spp.*), elm (*Ulmus spp.*), and Virginia pine (*Pinus virginiana*). Less common species include butternut (*Juglans cinerea*), bigtooth aspen (*Populus grandidentata*), black walnut (*Juglans nigra*), sweet bay (*Lauris nobilis*), magnolia (*Magnolia spp.*), eastern hemlock (*Tsuga canadensis*), and American sycamore (*Platanus occidentalis*). Common understory species include dogwood (*Cornus florida*), redbud (*Cercis canadensis*), Hercules club (*Zanthoxylum clava-herculis*), mountain laurel (*Kalmia latifolia*), American holly (*Ilex opaca*), ironwood (*Eusideroxylon*), sassafras (*Sassafras albidum*), and hophornbeam (*Ostrya virginiana*). Invasive exotic species such as wisteria (*Wisteria sinensis*), Japanese Wisteria (*Wisteria floribunda*), Japanese honeysuckle (*Lonicera japonica*), Tree-of-Heaven (*Ailanthus altissima*), Japanese knotweed (*Polygonum cuspidatum*), lespedeza (*Lespedeza cuneata*), multiflora rose (*Rosa multiflora*), princess tree (*Paulownia tomentosa*), and Japanese stiltgrass (*Microstegium vimineum*) are also found in the park.

During the planning for this project, a wetlands delineation of the proposed waterline routes was conducted. Wetland impacts are shown in the following map.

The National Wetlands Inventory database shows no wetlands in the project area. Field reconnaissance of the site by Paciulli, Simmons & Associates revealed that the project would temporarily impact approximately 0.41 acres of jurisdictional waters of the US, including wetlands.

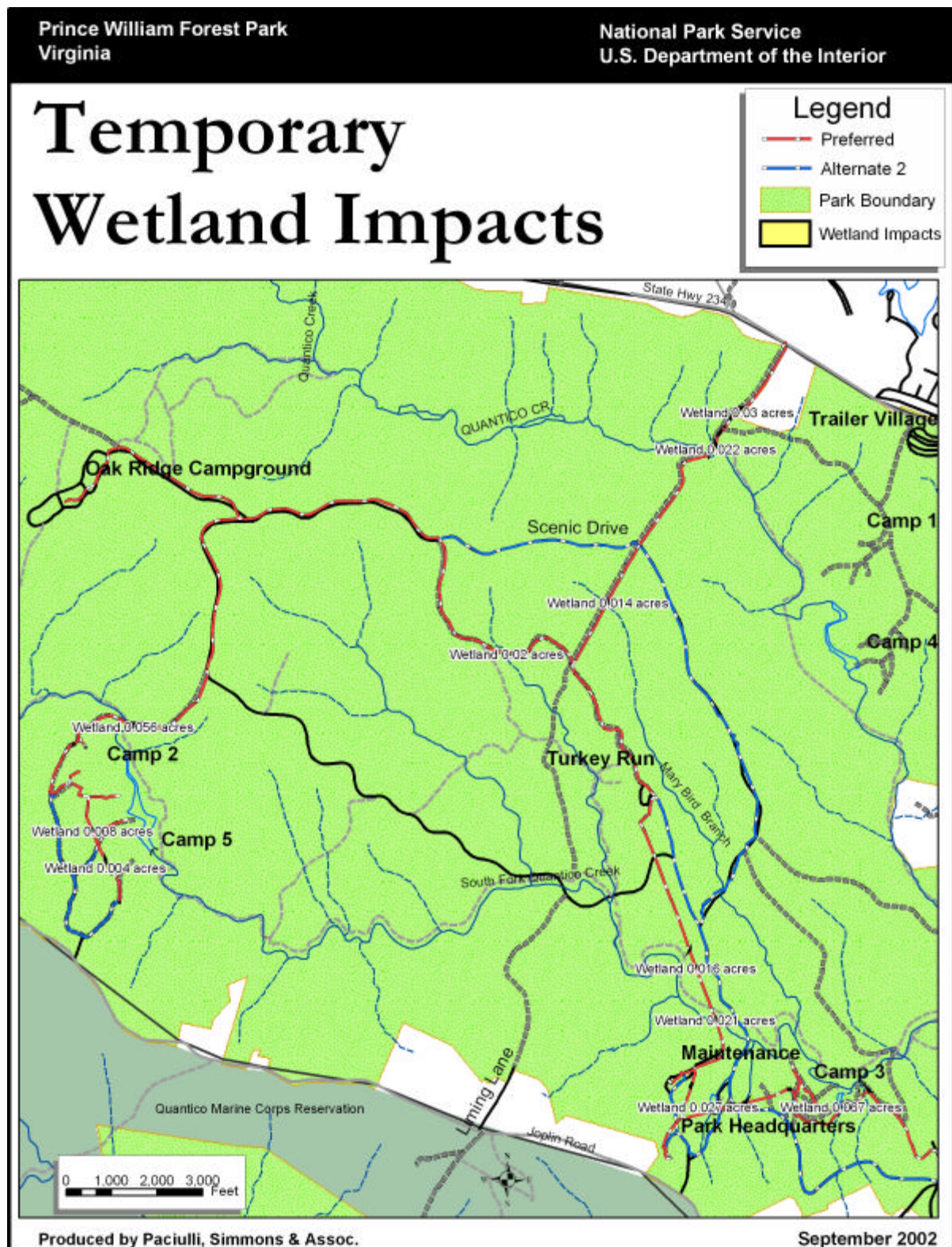


Figure 5.

Environmental Consequences

No Action Alternative – This alternative would have no impact on vegetation resources

Road-Shoulder Option – This option would necessitate cutting of trees and shrubs in the waterline route by placing the waterline on the shoulder of the existing Scenic Drive throughout much of the project length.

Portions of the route on existing unpaved roads would avoid vegetation impacts by restricting excavation to the road surface.

There are eleven locations where the waterline would cross narrow strips of wetlands along the streambeds. The wetlands would be temporarily disrupted by excavation and construction traffic. The wetlands would be returned to their original shape and elevations after construction is completed. Affected areas would be re-planted with approved wetland species to restore the original wetlands function and appearance.

Existing Right-of-Way, Preferred Alternative – This option would require selective cutting of individual saplings and shrubs in the existing utility rights-of-way. These rights-of-way are routinely mowed and/or bush-hogged as a matter of normal maintenance, so only young plants that have grown up since the last mowing would be affected. Cutting would be restricted to those plants growing in the new waterline route. In these areas there would be a danger that non-native species would opportunistically invade the disturbed areas. This impact would be minimized by re-planting disturbed areas with native species immediately after completion of construction in each area. The construction contractor will be required to ensure that non-native species will not be brought into the park on construction equipment.

All trees 10'' and smaller shall be chipped and spread on-site. Trees greater than 10'' shall be cut and dragged into wooded areas, and left as habitat, as directed by the Contracting Officer.

Portions of the route on existing unpaved roads would avoid vegetation impacts by restricting excavation to the road surface.

Wetlands impacts would be very similar to the Road-Shoulder Option. Approximately 0.41 acres of wetlands would be temporarily disturbed during the construction period. The wetlands would be returned to their former shape and function immediately following completion of construction activities in the affected area.

Wildlife Resources

Affected Environment

Prince William Forest Park is an increasingly rare regional example of deep forest habitat, and shelters a diverse population of wildlife. Species found in the park include white-tailed deer, wild turkey, ruffed grouse, gray fox, beaver, raccoons, gray squirrels, and opossums. Bird species in Prince William Forest Park include great horned owls, woodcocks, pileated woodpeckers, hawks, warblers, and songbirds. Bald eagles are known to use the area, possibly for hunting, but do not nest in the park. A number of wildlife species are either

absent or under stress in the surrounding suburban area, and the park provides a refuge for these animals.

Environmental Consequences

No Action Alternative –

This alternative would have no impacts on wildlife resources.

Road-Shoulder Option – This option would cause temporary disruption to wildlife habitat in a small area restricted to the portion of the route under active construction. Mulching and seeding after the completion of construction would restore the waterline route herbaceous vegetation. These features of habitat would be restored to emulate those present prior to the project. A limited number of mature trees on the road shoulder would be destroyed in this alternative; these would take some decades to replace.

Existing Right-of-Way, Preferred Alternative – Impacts in this option would be similar to the Road-Shoulder Option, with long-term impacts somewhat reduced by the smaller number of trees required to be cut.

Endangered Species

Affected Environment

There are two threatened, endangered or rare species that might be affected by the project; the small whorled pogonia (*Isotria medeoloides*), a member of the orchid family. The small whorled pogonia has a range extending from southern Maine down the Atlantic seaboard to Georgia. One of the three major population centers is concentrated in the Coastal Plain and Piedmont of Virginia. The National Park Service has surveyed all suitable habitat within the park boundary and identified the locations of the existing populations. During the planning for this project a field survey for small whorled pogonia was conducted by Dr. Donna M.E. Ware. No populations of small whorled pogonia were found in the project area. Dr. Ware will conduct an additional search of the proposed route in the summer of 2003 prior to construction.

The dwarf wedge mussel (*Alasmodonta heterodon*) is a small shellfish that once inhabited coastal rivers from Maine to North Carolina. It is currently found in only a few locations and has been threatened by erosion and sedimentation and by dam building. There is no known population of the species in Prince William Forest Park, but a survey for *Alasmodonta* will be completed prior to the start of construction. If colonies of this species are encountered, the route of the waterline will be changed to avoid impacts on the organisms or their habitat.

Environmental Consequences

No Action Alternative – This option would have no impact on the small whorled pogonia or dwarf wedge mussel.

Road-Shoulder Option - This option would have no impact on the small whorled pogonia or dwarf wedge mussel.

Existing Right-of-Way, Preferred Alternative - This option would have no impact on the small whorled pogonia or dwarf wedge mussel.

Recreation Resources

Affected Environment

Prince William Forest Park is the largest natural park in the Washington Metropolitan Area and offers a unique opportunity for passive recreation close to major urban populations. Recreational opportunities include hiking, fishing, camping, picnicking, bicycling, and nature study supported by 37 miles of trails, 22 miles of streams, 5 ponds and lakes, one 100-site family campground, one 170-person group campground, one RV campground (concessionaire operated), a designated backcountry camping area, 3 picnic areas, and 5 cabin camp camps with a capacity of 686 people. The group campground, the family campground, one picnic area, a portion of Camp 5 and a portion of the RV campground are operated year-round. The most popular activities at the park are hiking, driving the Scenic Drive, and camping in the developed campgrounds.

Park visitation is stable at about 250,000 visitors per year. Monthly visitation patterns indicate that visitation is seasonal. More than 75 percent of the visits occur from April through October. The largest monthly visitation occurs in May. July records the heaviest use of campsites and cabin camps. Most of the cabin camps are closed during the winter.

Environmental Consequences

No Action Alternative – This option would cause no immediate impacts on recreation resources. However, impacts under this alternative would occur in the event of failure of the water supply system. Visitor and staff use of the cabin camps, visitor's center and nature center would be severely restricted if fresh water were to become unavailable.

Road-Shoulder Option – This alternative would ensure the availability of water for use by park staff and visitors. Temporary impacts from noise and dust would be noticeable by recreational park users. Construction on the road shoulder would require implementation of traffic control measures to ensure continued safe use of the park's public roads in the construction area. Complete exclusion of the public from the paved roads would not be required. The bicycle lane would be narrowed in the immediate vicinity of active construction, possibly requiring slowing, or dismounting by bicyclists. Pedestrians would similarly be restricted to a narrower lane in the immediate vicinity of construction.

Existing Right-of-Way, Preferred Alternative – Impacts from this alternative would be similar to the Road-Shoulder Option. The temporary impacts from noise and dust would be somewhat reduced in comparison, as most of the construction activity in this alternative would be out of sight of park visitors. Construction activity on the park's unpaved roads would require temporary exclusion of the public from small portions of these features during certain phases of the project. Public access denial would be restricted to the area under active construction, an area not expected to exceed a few hundred feet in linear extent.

On the portion of the waterline route on the shoulder of the paved road, the impacts would be similar to those described for the Road-Shoulder Option, but would be reduced under the

preferred alternative to only the section of Scenic Drive between Burma Road and Mawavi Road.

Cultural Resources

Affected Environment

Human habitation of the area of Prince William Forest Park may have begun as early as 11,000 years ago, but definite evidence of human presence dates to about 7000 B.C. Native American occupation of the area was sparse throughout the pre-Columbian period. European settlement saw the use of the park land for tobacco cultivation until the Revolutionary War. During this period Dumfries was an important seaport. After this time, poor land management practices resulted in the filling of Dumfries harbor by silt and sediment from the uplands, destroying the economy of the town.

Route 1, east of the park, was a Native American Trail and then a major route during the Colonial period.

During the Civil War portions of the park were occupied by Confederate troops manning batteries that guarded the Potomac River approaches to Washington. After the Civil War the park was used for agriculture, but was of poor quality due to earlier soil erosion and depletion of soil nutrients.

In 1933 the United States Government classified approximately 15,000 acres of the Quantico Creek watershed as "sub marginal," or "severely depressed farm area" lands in order to develop a new project called Chopawamsic Demonstration Area for the Emergency Conservation Work Program (Civilian Conservation Corps.) The Civilian Conservation Corps operated from 1933 until the beginning of World War II in 1942 as a government agency to provide work for low-income young men. Approximately 150 farms were condemned and the families were relocated. In 1936, the property was transferred to the jurisdiction of the National Park System.

Environmental Consequences

No Action Alternative – This option would have no impact on cultural resources.

Road-Shoulder Option – The archeological excavation by Thunderbird Archeology Associates indicates no archeological resources exist within the project area. This option would have no impact on cultural resources.

Existing Right-of-Way, Preferred Alternative – Impacts from this option would be identical to the Road-Shoulder Option.

Cumulative Impacts

No Action Alternative – This alternative would cause no immediate impacts on the human environment. However, the cumulative effects of not addressing the water supply problems in the park could result in serious disruptions to visitor activity as well as the ability of the park staff to maintain, protect, and interpret the resource. These effects would have a negative impact on the mission of the National Park Service.

Road-Shoulder Option – This alternative would ensure availability of fresh water for use by park visitors and staff while creating only temporary environmental impacts. The most long-lasting impact would be a set back to the timetable for achievement of the management goal to re-establish full forest canopy over the park roads.

Existing Right-of-Way, Preferred Alternative – Cumulative impacts from this alternative would be similar to the Road-Shoulder Option, but with somewhat reduced long-term impacts to vegetation resources. Re-vegetation of the existing utility rights-of-way following completion of construction would be essentially complete after one growing season.

Summary Comparison of Impacts

Table 1. Summary comparison of impacts

Issues	No Action	Road-Shoulder Option	Existing Right-of-Way, Preferred Alternative
Visual	No immediate impact	Temporary impacts from work crews and vehicles during construction. Long-term impacts from tree-cutting	Temporary impacts from work crews and vehicles during construction. Limited long-term impact from tree-cutting
Air Quality	No immediate impact	Temporary impacts from dust and vehicle emissions during construction	Same as Road-Shoulder Option
Noise, Traffic and Safety	No immediate impact	Temporary impacts from construction traffic	Same as Road-Shoulder Option
Water Resources	No immediate impact. Failure of existing water infrastructure could damage water resources	Eight stream crossings. Temporary increase in sedimentation during construction. To be mitigated by erosion and sediment controls	Same as Road-Shoulder Option
Fisheries Resources	No immediate impact. Failure of existing water infrastructure could damage fisheries resources	Temporary impacts during construction. Turbidity from construction to be mitigated by erosion and sediment controls	Same as Road-Shoulder Option
Vegetation	No impact	Selective cutting of trees and shrubs on paved road shoulder required. Wetlands impacts to be minimized by routing stream crossings away from wetlands	Minimized cutting of trees and shrubs on paved road shoulder required. Wetlands impacts same as Road-Shoulder Option
Wildlife Resources	No impact	Temporary disruption of wildlife in areas under active construction	Same as Road-Shoulder Option

Table 1. Summary comparison of impacts

Issues	No Action	Road-Shoulder Option	Existing Right-of-Way, Preferred Alternative
Threatened and Endangered Species	No impact	No impact	No impact
Recreation Resources	No impact	Temporary disruption of visitor use in areas under active construction	Same as Road-Shoulder Option
Cultural Resources	No impact	No impact	Same as Road-Shoulder Option

Chapter IV – Consultation and Coordination

Consultation

U.S. Fish and Wildlife Service
Virginia Field Office

U.S. Department of the Army
Corps of Engineers
Dumfries, Virginia

Virginia Department of Game and Inland Fisheries

Department of Historic Resources
Richmond, Virginia

Virginia Marine Resources Commission
Newport News, Virginia

Distribution

U.S. Fish and Wildlife Service, Virginia Field Office
Virginia Department of Environmental Quality
Virginia State Historic Preservation Officer
The Piedmont Environmental Council
Quantico Marine Corps Base
Prince William County Board of Supervisors
Mayor of Dumfries
Mayor of Quantico
US National Park Service, National Capital Region, Natural Resources and Science Division
U.S. Army Corps of Engineers, Dumfries Office
James Waggener, Chairman, Prince William Natural Resources Council

Copy of press release faxed to:

Washington Post
Potomac News
Prince William Journal
Quantico Sentry

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3. Townsend, John F. 2001. Natural Heritage Resources of Virginia: Rare Vascular Plants. Natural Heritage Technical Report 01-11. Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, Virginia. Unpublished report. March 2001. 30 pages plus appendices.
4. Archaeological Report, Prince William Forest Park Waterline, September 2002. Thunderbird Archeological Associates, Inc for National Park Service, Prince William Forest Park, Triangle, VA.
5. Endangered Species Review, Waterline Right-of-Way, September 24, 2002. Dr. Donna M. E. Ware for National Park Service, Prince William Forest Park, Triangle, VA.

Appendix A

Natural Heritage Resources of Prince William County, Virginia

Scientific name	Common name	Global rank	State rank	Federal status	State status	Last seen in county since 1980?
Birds						
<i>Haliaeetus leucocephalus</i>	Bald eagle	G4	S2	LT	LT	Y
<i>Ixobrychus exilis</i>	Least bittern	G5	S2			Y
Communities						
	Piedmont/mountain swamp forest					Y
	Montane acidic seepage swamp					Y
	Coastal plain/piedmont acidic					Y
	Seepage swamp					
	Upland depression swamp					Y
	Tidal freshwater marsh					Y
	Mesic mixed hardwood forest					Y
	Eastern white pine forest					Y
	Pine-oak/heath woodland					Y
	Chestnut oak forest					Y
	Mafic grassland/scrub					Y
	<i>Quercus alba</i> / <i>Cercis canadensis</i> / basic oak - hickory forest	G?	S3			Y
	<i>Elymus hystrix</i> - muhlenbergia					
	Sobolifera forest					
Invertebrates						
<i>Alasmodonta varicosa</i>	Brook floater	G3	S1		LE	No date
<i>Arigomphus furcifer</i>	Lily pad clubtail	G5	S1			N
<i>Callophrys irus</i>	Frosted elfin	G3	S2			N
<i>Elliptio lanceolata</i>	Yellow lance	G2G3	S2S3		SC	No date
<i>Erynnis martialis</i>	Mottled duskywing	G3G4	SU			N
<i>Helluomorphoides nigripennis</i>	A flat-horned ground beetle	G4?	S1			Y
<i>Lestes disjunctus</i>	Northern common spreadwing	G5T5	S1			Y

Scientific name	Common name	Global rank	State rank	Federal status	State status	Last seen in county since 1980?
<i>Nehalennia gracilis</i>	Sphagnum sprite	G5	S2			Y
<i>Nehalennia irene</i>	Sedge sprite	G5	S1			Y
<i>Sigara depressa</i>	Virginia piedmont water boatman	G1G3	S1S3			N
<i>Speyeria idalia</i>	Regal fritillary	G3	S1			No date
Vascular plants						
<i>Agalinis auriculata</i>	Earleaf foxglove	G3	S1			Y
<i>Asclepias rubra</i>	Red milkweed	G4G5	S2			Y
<i>Aster ericoides</i>	White heath aster	G5	S2			Y
<i>Buchnera americana</i>	Blue-hearts	G5?	S1s2			Y
<i>Cabomba caroliniana</i>	Carolina fanwort	G3G5	S1			Y
<i>Carex buxbaumii</i>	Brown bog sedge	G5	S2			Y
<i>Carex vestita</i>	A sedge	G5	S2			Y
<i>Crataegus calpodendron</i>	Pear hawthorn	G5	S1			N
<i>Filipendula rubra</i>	Queen-of-the-prairie	G4G5	S2			N
<i>Isoetes appalachiana</i>	Engelmann's quillwort	G4	S2?			Y
<i>Isotria medeoloides</i>	Small whorled pogonia	G2G3	S2	LT	LE	Y
<i>Lycopodiella inundata</i>	Northern bog clubmoss	G5	S1			N
<i>Oligoneuron rigidum var rigidum</i>	Stiff goldenrod	G5T5	S2			Y
<i>Orthilia secunda</i>	One-sided wintergreen	G5	SH			N
<i>Penstemon hirsutus</i>	Hairy beardtongue	G4	S2			Y
<i>Pyrola elliptica</i>	Shinleaf	G5	S2			N
<i>Ranunculus longirostris</i>	White water crow-foot	G5	S1			N
<i>Rosa setigera</i>	Prairie rose	G5	S1			N
<i>Schoenoplectus acutus</i>	Hardstemmed bulrush	G5	S1			N
<i>Sphenopholis filiformis</i>	Long-leaf wedgescale	G4?	S1			N
<i>Spiranthes ochroleuca</i>	Yellow nodding ladies'-tresses	G4	S1			N
<i>Stachys pilosa var arenicola</i>	Marsh hedgenettle	G5T4?	S1			Y
<i>Trifolium reflexum</i>	Buffalo clover	G5	S1			No date

Definitions of Abbreviations Used on Natural Heritage Resource Lists

State Rank

The following ranks are used by the Virginia Department of Conservation and Recreation to set protection priorities for natural heritage resources. Natural Heritage Resources, or "NHR's," are rare plant and animal species, rare and exemplary natural communities, and significant geologic features. The criterion for ranking NHR's is the number of populations or occurrences, i.e. the number of known distinct localities; the number of individuals in existence at each locality or, if a highly mobile organism (e.g., sea turtles, many birds, and butterflies), the total number of individuals; the quality of the occurrences, the number of protected occurrences; and threats.

S1 - Extremely rare; usually 5 or fewer populations or occurrences in the state; or may be a few remaining individuals; often especially vulnerable to extirpation.

S2 - Very rare; usually between 5 and 20 populations or occurrences; or with many individuals in fewer occurrences; often susceptible to becoming extirpated.

S3 - Rare to uncommon; usually between 20 and 100 populations or occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

S4 - Common; usually >100 populations or occurrences, but may be fewer with many large populations; may be restricted to only a portion of the state; usually not susceptible to immediate threats.

S5 - Very common; demonstrably secure under present conditions.

SA - Accidental in the state.

S#B - Breeding status of an organism within the state.

SH - Historically known from the state, but not verified for an extended period, usually > 15 years; this rank is used primarily when inventory has been attempted recently.

S#N - Non-breeding status within the state. Usually applied to winter resident species.

SU - Status uncertain, often because of low search effort or cryptic nature of the element.

SX - Apparently extirpated from the state.

SZ - Long distance migrant whose occurrences during migration are too irregular, transitory and/or dispersed to be reliably identified, mapped and protected.

Global ranks are similar, but refer to a species' rarity throughout its total range. Global ranks are denoted with a "G" followed by a character. Note that GA and GN are not used and GX

means apparently extinct. A "Q" in a rank indicates that a taxonomic question concerning that species exists. Ranks for subspecies are denoted with a "T". The global and state ranks combined (e.g. G2/S1) give an instant grasp of a species' known rarity.

These ranks should not be interpreted as legal designations.

FEDERAL STATUS

The Division of Natural Heritage uses the standard abbreviations for Federal endangerment developed by the U.S. Fish and Wildlife Service, Division of Endangered Species and Habitat Conservation.

LE - Listed Endangered

LT - Listed Threatened

PE - Proposed Endangered

PT - Proposed Threatened

C - Candidate (formerly C1 - Candidate category 1)

E(S/A) - treat as endangered because of similarity of appearance

T(S/A) - treat as threatened because of similarity of appearance

STATE STATUS

LE - Listed Endangered

PE - Proposed Endangered

SC - Special Concern - animals that merit special concern according to VDGIF (not a regulatory category)

LT - Listed Threatened

PT - Proposed Threatened

C - Candidate

Appendix B

Environmental Commitments

- The following list outlines environmental commitments associated with the construction and mitigation of the proposed preferred alternative.
- Following construction, disturbed areas would be reseeded with the Park's approved seed mixture.
- All waste materials and excess of unneeded fill associated with project construction would be disposed of properly and not in wetlands or identified floodplain areas.
- Discharges of fill material in wetlands or waters of the US will be carried out in compliance with provisions of Section 404 of the Clean Water Act and the nationwide and/or project specific permit requirements of the US Army Corps of Engineers and any associated permitting agencies.
- Control measures, such as silt fence and protective berms will be employed where necessary to reduce erosion and to prevent sedimentation of the streams.
- Construction areas will be watered during dry conditions to control dust.
- Personnel who are certified through the Commonwealth of Virginia in pesticide application will control noxious weeds within any reseeded area, after consultation with and approval of NPS staff.
- Tree removal will be kept to an absolute minimum.
- Contamination of water will be controlled at construction sites from fuel spillage, lubricants, and chemicals by following safe storage and handling procedures.
- Equipment exhaust systems will be maintained to factory or better specifications to minimize noise.
- National ambient air quality standards will not be exceeded.
- Should any buildings, structures, sites, objects, or districts or properties of traditional religious and cultural importance be discovered that qualify as historic properties, the National Park Service will consult with the State Historic Preservation Officer to determine whether any qualify as historic properties and to determine the effects of construction activities on the properties per 36 CFR Part 800.4 and 800.5. Any avoidance or mitigation measures would be instituted before construction begins.
- If unanticipated cultural resources, such as artifacts, foundations or other historic items are encountered during construction, all ground disturbing activities in the immediate

area of the resource will be stopped until NPS can consult with the SHPO and evaluate the resource per 36 CFR Part 800.13.

- If any unanticipated threatened or endangered species are encountered during construction, all ground disturbing activities in the immediate area will be stopped until the NPS can consult with the US Fish and Wildlife Service to determine the appropriate steps to avoid impacting the species.
- At no time will wildlife be taken, fed, harassed, trapped or disturbed. NPS staff will be immediately notified if species are present on the construction site that could cause a health or safety concern